



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,694	11/24/2003	Akira Oosawa	Q78578	3220
23373	7590	05/22/2007		
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER WOLDEMARIAM, AKILILU K	
			ART UNIT 2609	PAPER NUMBER
			MAIL DATE 05/22/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/718,694	Applicant(s) OOSAWA, AKIRA	
	Examiner Aklilu k. Woldemariam	Art Unit 2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) ~ | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>24 November 2003; 03/05/2004.</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on November 24, 2003 was filed after the mailing date of the same day on November 24, 2003. The second information disclosure statement (IDS) submitted on 5 March 2004 was filed after the mailing date on the same day on 5 March 2004. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information disclosure statement.

Claim Rejections - 35 USC § 103

2 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1, 4, 7, 10, 13, 15, 17 and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Oosawa, hereinafter Oosawa (U.S. Publication number 2001/0002934 A1) in view of Murakami, thereafter Murakami (U.S. Patent number 6,317,510 B1).

Regarding claim 1 Oosawa discloses an image processing apparatus equipped with an inter image calculating means (see column 2, lines 58-67 and Fig. 1, 3) for performing inter image calculations to derive differences between two images of a single subject to obtain a difference image that represents the differences between the

Art Unit: 2609

two images (see column 3, lines 4-15); wherein the inter image calculation means performs the inter image calculation employing the corrected image, for the image which has been judged to have undergone image processes (see column 2, lines 58-67 and Fig. 1&3).

Oosawa does not disclose expressly the process confirmation data representing whether an image has undergone image processes is attached to each of the two images, and image processing condition data representing image processing conditions are further attached to the images which have undergone image processes; the image processing apparatus further comprising a judgment means for judging whether the two images have undergone image processes, based on the process confirmation data attached to each of the two images; and a correction means for correcting an image which has been judged to have undergone image processes, to correct the image to a state equivalent to its original state prior to the image processes, based on the image processing condition data attached thereto.

However Murakami discloses the process confirmation data representing whether an image has undergone image processes is attached to each of the two images (see column 26, lines 27-31 and Fig.10), and image processing condition data representing image processing conditions are further attached to the images which have undergone image processes; the image processing apparatus further comprising a judgment means for judging whether the two images have undergone image processes, based on the process confirmation data attached to each of the two images (see column 19, lines 47-67 and Fig.10); and a correction means for correcting an image which has been

Art Unit: 2609

judged to have undergone image processes, to correct the image to a state equivalent to its original state prior to the image processes (see column 26, lines 46-67 and Fig.13), based on the image processing condition data attached thereto.

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Murakami's process confirmation data, judgment means and correction means in Oosawa's an image display apparatus and method which facilitate comparison of two or more images of an identical object in order to comparing or matching two images, [Oosawa, see column 3, lines 45-49 and Fig.1].

Regarding claim 4, Oosawa discloses an image processing apparatus as defined in claim 1, further comprising a positional alignment means for aligning the positions of the two images so that structural components of the single subject substantially match (see abstract, column 3, lines 50-54 and Fig.8); wherein the inter image calculation means performs the inter image calculation between the two images which have been positionally aligned (see column 2, lines 58-67).

Regarding claim 7, Oosawa discloses an image processing apparatus equipped with an inter image calculating means for (see column 2, lines 58-67) performing inter image calculations to derive differences between two images of a single subject to obtain a difference image that represents the differences between the two images (see column 3, lines 4-15), wherein the inter image calculation means performs the inter image calculation employing the corrected image (column 7, lines 40-45 and Fig.8), for the image which has been judged to have undergone image processes.

Oosawa does not disclose the process confirmation data representing whether an image has undergone image processes is attached to each of the two images; the image processing apparatus further comprising a judgment means for judging whether the two images have undergone image processes, based on the process confirmation data attached to each of the two images; and a correction means for correcting an image which has been judged to have undergone image processes, to cause the image to approximate its original state prior to the image processes, based on typical image processing conditions of image processes which have been administered to the image .

However Murakami discloses the process confirmation data representing whether an image has undergone image processes is attached to each of the two images (see column 26, lines 27-31 and Fig.10); the image processing apparatus comprising a judgment means for judging whether the two images have undergone image processes (see column 19, lines 47-67 and Fig.10), based on the process confirmation data attached to each of the two images; and a correction means for correcting an image which has been judged to have undergone image processes (see column 26, lines 46-67 and Fig.13), to cause the image to approximate its original state prior to the image processes, based on typical image processing conditions of image processes which have been administered to the image.

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Murakami's process confirmation data, judgment means and correction means in Oosawa's an image display apparatus and method

Art Unit: 2609

which facilitate comparison of two or more images of an identical object in order to comparing or matching two images, [Oosawa, see column 3, lines 45-49 and Fig.1].

Regarding claim 10, Oosawa discloses an image processing apparatus as defined in claim 7, comprising a positional alignment means for aligning the positions of the two images so that structural components of the single subject substantially match (see abstract, column 3, lines 44-49 and Fig.8); wherein the inter image calculation means performs the inter image calculation between the two images which have been positionally aligned (see column 2, lines 58-67).

Regarding claim 13, Oosawa discloses an image processing apparatus equipped with an inter image calculating means for (see column 2, lines 58-67 and Fig.3) performing inter image calculation to derive differences between two images of a single subject to obtain a difference image that represents the differences between the two images (see column 3, lines 4-15), to obtain a difference image which would be obtained if the inter image calculation was performed employing the two images prior to the image processes (column 7, lines 40-45 and Fig.8), based on the image processing condition data attached thereto.

Oosawa does not disclose a judgment means for judging whether the two images have undergone image processes, based on the process confirmation data attached to each of the two images; and a correction means for correcting the difference image to be obtained by the inter image calculation in the case that at least one of the two images have undergone image processes.

However, Murakami discloses comprising a judgment means for judging whether the two images have undergone image processes (see column 19, lines 47-67 and Fig.10), based on the process confirmation data attached to each of the two images (see column 26, lines 27-31 and Fig.10); and a correction means for correcting the difference image to be obtained by the inter image calculation in the case that at least one of the two images have undergone image processes (see column 26, lines 46-67 and Fig.13).

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Murakami's process confirmation data, judgment means and correction means in Oosawa's an image display apparatus and method which facilitate comparison of two or more images of an identical object in order to comparing or matching two images, [Oosawa, see column 3, lines 45-49 and Fig.1].

Regarding claim 15, Oosawa discloses an image processing apparatus as defined in claim 13, comprising a positional alignment means for aligning the positions of the two images so that structural components of the single subject substantially match (see abstract, column 3, lines 44-49 and Fig.8); wherein the inter image calculation means performs the inter image calculation between the two images which have been positionally aligned (see column 2, lines 58-67).

Regarding claim 17, Oosawa discloses an image processing apparatus equipped with an inter image calculating means for performing inter image calculations to derive differences between two images of a single subject to obtain a difference image that represents the differences between the two images (see column 6, lines 58-67) and to

Art Unit: 2609

obtain a difference image approximating that which would be obtained if the inter image calculation (column 7, lines 40-45 and Fig.8) was performed employing the two images prior to the image processes, based on typical image processing conditions of the image processes administered to the at least one of the two images.

Oosawa does not disclose the process confirmation data representing whether an image has undergone image processes is attached to each of the two images, and image processing condition data representing image processing conditions are further attached to the images which have undergone image processes; the image processing apparatus further comprising a judgment means for judging whether the two images have undergone image processes, based on the process confirmation data attached to each of the two images; and a correction means for correcting the difference image to be obtained by the inter image calculation in the case that at least one of the two images are judged to have undergone image processes.

However, Murakami discloses the process confirmation data representing whether an image has undergone image processes is attached to each of the two images (see column 26, lines 27-31 and Fig.10), and image processing condition data representing image processing conditions are further attached to the images which have undergone image processes; the image processing apparatus further comprising a judgment means for judging whether the two images have undergone image processes (see column 19, lines 47-67 and Fig.10), based on the process confirmation data attached to each of the two images (see column 26, lines 27-31 and Fig.10); and a correction means for correcting the difference image to be obtained by the inter image calculation

in the case that at least one of the two images are judged to have undergone image processes (see column 26, lines 46-67 and Fig.13).

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Murakami's process confirmation data, judgment means and correction means in Oosawa's an image display apparatus and method which facilitate comparison of two or more images of an identical object in order to comparing or matching two images, [Oosawa, see column 3, lines 45-49 and Fig.1].

Regarding claim 19, Oosawa discloses an image processing apparatus as defined in claim 17, comprising a positional alignment means for aligning the positions of the two images so that structural components of the single subject substantially match (see abstract, column 3, lines 45-49 and Fig.8); wherein the inter image calculation means performs the inter image calculation between the two images which have been positionally aligned (see column 2, lines 58-67).

4. **Claims 2, 3, 5, 6, 8, 9, 11, 12, 14, 16, 18 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Oosawa in view of Murakami, as applied to claims 1, 7, 13 and 17 in the above and further in view of Yanagita et al. "Yanagita "(U.S. Patent number 6,415,049 B1).

Regarding claim 2, 8, 14 and 18 Oosawa and Murakami do not disclose expressly that includes a gradation process.

However, Yanagita discloses that an image processes includes a gradation process (see column 17, lines 44-47 and column 3, lines 1-8, and Fig.8c, 12 and 14c).

It would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Yanagita's gradation process in Oosawa's an image display apparatus and method which facilitate comparison of two or more images of an identical object in order to contrast images, [Yanagita's, see column 17, lines 44-47].

Regarding claims 3, 9 Oosawa and Murakami do not disclose that includes a frequency process.

However, Yanagita discloses that an image processes includes a frequency process (see column 18, lines 16-20 and Fig.8 c & 14).

At the time of invention, it would have been obvious to someone of the ordinary skill in the art at the time when the invention was made to use Yanagita's frequency process in Oosawa's an image display apparatus and method which facilitate comparison of two or more images of an identical object in order to sharpening the images, [Yanagita's, see column 17, lines 47-52 and Fig.8c, 12,14c].

Regarding claim 5,Oosawa discloses an image processing apparatus as defined in claim 2, further comprising a positional alignment means for aligning the positions of the two images so that structural components of the single subject substantially match (see abstract, column 3, lines 44-49 and Fig.8); Wherein the inter image calculation means performs the inter image calculation between the two images which have been positionally aligned (see column 2, lines 58-67 and Fig.3).

Regarding claim 6, Oosawa discloses an image processing apparatus as defined in claim 3, comprising a positional alignment means for aligning the positions of the two

Art Unit: 2609

images so that structural components of the single subject substantially match (see abstract and Fig.8); wherein the inter image calculation means performs the inter image calculation between the two images which have been positionally aligned (see column 2, lines 58-67).

Regarding claim 11, Oosawa discloses an image processing apparatus as defined in claim 8, further comprising a positional alignment means for aligning the positions of the two images so that structural components of the single subject substantially match (see abstract, column 3, lines 44-49 and Fig.8); wherein the inter image calculation means performs the inter image calculation between the two images which have been positionally aligned (see column 2, lines 58-67 and Fig.3).

Regarding claim 12, Oosawa discloses an image processing apparatus as defined in claim 9, comprising a positional alignment means for aligning the positions of the two images so that structural components of the single subject substantially match (see abstract, column 3, lines 44-49 and Fig.8); wherein the inter image calculation means performs the inter image calculation between the two images which have been positionally aligned (see column 6, lines 32-42 and Fig.8).

Regarding claim 16, Oosawa discloses an image processing apparatus as defined in claim 14, comprising a positional alignment means for aligning the positions of the two images so that structural components of the single subject substantially match (see abstract, column 3, lines 44-49 and Fig.8); wherein the inter image calculation means performs the inter image calculation between the two images which have been positionally aligned (see column 2, lines 58-67).

Regarding claim 20, Oosawa discloses an image processing apparatus as defined in claim 18, comprising a positional alignment means for aligning the positions of the two images so that structural components of the single subject substantially match (see abstract, column 3, lines 44-49 and Fig.8); wherein the inter image calculation means performs the inter image calculation between the two images which have been positionally aligned (see column 58-67 and Fig.3).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ohara (U.S. Patent number 6934409 B2) discloses PCI radiation image processing apparatus.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aklilu k. Woldemariam whose telephone number is 571-270-3247. The examiner can normally be reached on Monday-Thursday 6:30 a.m-5:00 p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on 571-272-7687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2609

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

5/14/2007


DENNIS-DOON CHOW
PRIMARY EXAMINER